II. REMARKS

Preliminary Remarks

This response is timely filed as it is accompanied by a petition for an extension of time to file in the second month and the requisite fee. Further, the deadline for taking action, March 1, 2003, fell on a day in which the Patent Office is closed (Saturday) and this response is being filed the next day in which the Patent Office is operational, March 3, 2003 (Monday).

After entry of this amendment, claims 35-60 will be pending. Thus there will be an effective total of 29 claims, with three independent claims (claims 35, 51, and 57), and one multiply dependent claim (claim 42). As originally filed, the applicants paid for an effective total of 34 claims (which included 3 independent claims). Therefore, the applicants submit that no additional claim fees are due with respect to new claims 35-60. However, because claim 42 is multiply dependent and no surcharge for multiply dependent claims has previously been paid, the surcharge for multiply dependent claims is due, and is authorized to be charged on the attached cover sheet.

Support for new claims 35-60 may be found throughout the specification and claims as originally filed. Specifically and as a convenience to the examiner, the applicants, rather than amend the present claims, have simply provided a clean set of new claims. No new matter is believed to have been introduced by the foregoing amendment.

Patentability Remarks

35 U.S.C. § 112, Second Paragraph

The examiner rejected claims 1-34 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for use of specific language. In response the applicants submit that this rejection is now moot. Specifically, the applicants note that the language referred to by

the examiner does not appear in new claims 35-60. Therefore, the applicants respectfully request the rejection based upon 35 U.S.C. §112, second paragraph be withdrawn and not be extended to new claims 35-60.

35 U.S.C. §102(e)

Claims 1, 3-11, 13-16, 19, 26-29, 31, 32, and 34 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Dorfmeister *et al.*, U.S. Patent No. 5,995,868 (hereinafter the "'868 patent"). It is the examiner's position that the cited patent discloses (1) a system that analyzes signals representative of a subject's brain activity using a processor and intercranial electrodes, (2) analysis of this brain activity enables warning, treatment, and/or storage of the data on the patient's condition, (3) outputs can be intercranial or extracranial providing treatment to non-central nervous system organs, (4) an injector implanted for automated instantaneous release of the appropriate medicaments, and (5) sgnial processing that includes adaptive analysis of waveform characteristics such as wave form analysis.

The applicants respectfully traverse and submit that this rejection of claims 1-34 is now moot in that the claims have been canceled by the foregoing amendment. The applicants submit further that the present rejection should not be extended to new claims 35-60.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The applicants submit that the '868 patent does not disclose each and every element of the applicants' claimed invention.

Independent claim 35 is directed to a method of treating a medical disorder, while independent claim 51 is directed to a method of treating epilepsy and independent claim 57 is directed to a method of analyzing brain activity. Each of these methods requires, "monitoring at least one sensor" and "performing a wavelet cross-correlation analysis on data obtained from said monitoring." The applicants respectfully point out to the examiner that the cited patent does not disclose the use of wavelet cross-correlation analysis.

In view of the foregoing, the '868 patent, as a matter of law, cannot properly anticipate the applicants' invention as defined by claims 35-60. Therefore, the applicants respectfully request that the rejection based upon 35 U.S.C. §102(e) be withdrawn and not be extended to new claims 35-60.

35 U.S.C. §103(a)

Claims 2, 12, 20-25 and 33 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over the '868 patent in view of King *et al.* The applicants respectfully traverse and submit that the '868 patent either alone or in combination with King *et al.* render the presently claimed invention (as defined by claims 35-60) obvious.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicants' disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The applicants submit that the cited documents, either alone or in combination fail to teach or suggest the applicants' claimed invention, *i.e.*, fail to teach or suggest all of the claim limitations. The '868 patent neither teaches nor suggests the use of wavelet cross-correlation analysis as required by the applicants' invention.

Wavelet cross-correlation analysis is defined and explained on pages 22-24 of the present specification. In general, wavelet cross-correlation analysis involves two basic steps. First, wavelet transforms are performed on two signals. (The two signals may be two signals provided by two sensors, or two signals provided by the same sensor, for example, in different epochs of time.) The wavelet transforms provide information on the frequency components present in the underlying signals, as well as information on how those frequency components vary over time. Once the wavelet transforms have been performed on the two signals, the formulae on page 24 of the present specification are applied to the two wavelet-transformed signals to determine their strengths of correlation (*i.e.*, to perform the "cross-correlation" portion of the analysis). In the methods defined by claims 35, 51, and 57, the results of the wavelet cross-correlation analysis are then used in a diagnostic, analytical, or treatment task.

The '868 patent discloses the use of windowed Fourier transforms as filters to analyze EEG signals in an adaptive filtering process. At column 16, line 37, while the '868 suggests that wavelet *transforms* may be used on EEG signals instead of windowed Fourier transforms to analyze EEG signals, the inventors do not teach nor suggest the use of wavelet *cross-correlation*. Instead, the wavelet transform – without cross-correlation – is suggested as a potential analytical tool for use in the adaptive filtering method disclosed in the reference.

King *et al.* does little to overcome the failings of the '868 patent. While King *et al.* is cited for its alleged disclosure of charge balancing, the cited document also does not teach or suggest the use of wavelet cross-correlation analysis.

In view of the foregoing, the applicants submit that the '868 patent, either alone or in combination with King *et al.*, cannot, as a matter of law, render the present invention obvious and therefore request that the rejection of the claims under 35 U.S.C. §103(a) over the '868 patent in view of King *et al.* be withdrawn and not be extended to new claims 35-60.

Claims 17, 18, and 30 were also rejected under 35 U.S.C. § 103(a) as allegedly being obvious over the '868 patent in view of Ward *et al.*, U.S. Patent No. 5,978,702 (hereinafter the "'702 patent"). The applicants submit that the cited documents, either alone or in combination fail to teach or suggest the applicants' claimed invention, *i.e.*, fail to teach or suggest all of the claim limitations. The '868 patent neither teaches nor suggests the use of wavelet cross-correlation analysis as required by the applicants' invention.

The '702 patent does little to overcome the failings of the '868 patent. While the '702 patent is cited for allegedly disclosing drug infusion techniques, the cited document does not teach or suggest the use of wavelet cross-correlation analysis.

In view of the foregoing, the applicants submit that the '868 patent, either alone or in combination with '702 patent cannot, as a matter of law, render the present invention obvious and therefore request that the rejection of the claims under 35 U.S.C. §103(a) over the '868 patent in view of the '702 patent be withdrawn and not be extended to new claims 35-60.

III. CONCLUSION

In view of the foregoing, the applicants submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is strongly urged to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

Pillsbury Winthrop LLP

By: _____

Thomas A. Cawley, Jr., Ph.D.
Reg. No.: 40,944
Tel. No.: (703) 905-2144
Fax No.: (703) 738-2123

By: _____

Andrew McAleavey
Reg. No. 50,535
Tel. No.: (703) 905-2141

TAC:AM
1600 Tysons Boulevard
McLean, VA 22102

(703) 905-2000
General Facsimile: (703) 905-2500